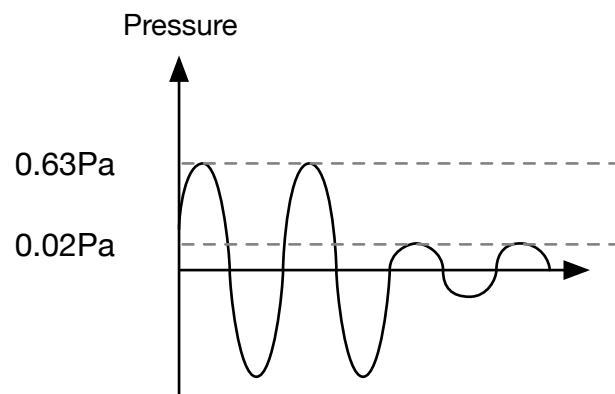
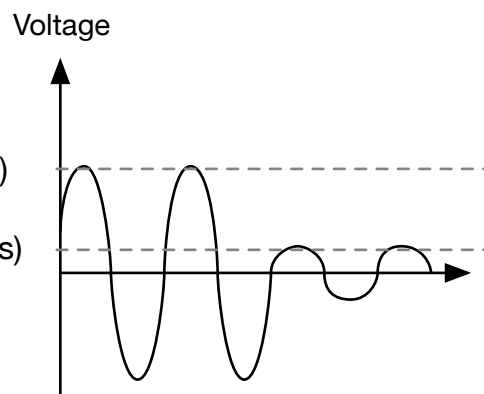


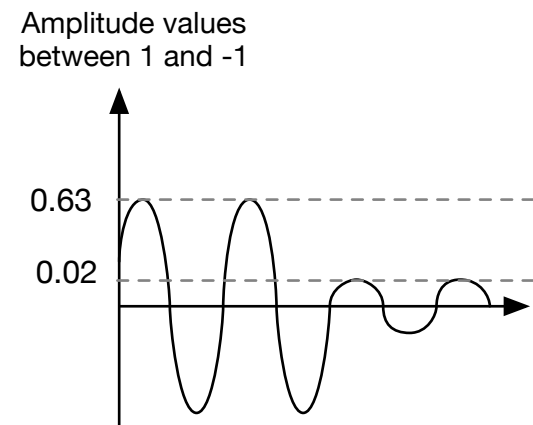
Comparing Decibels: an Example



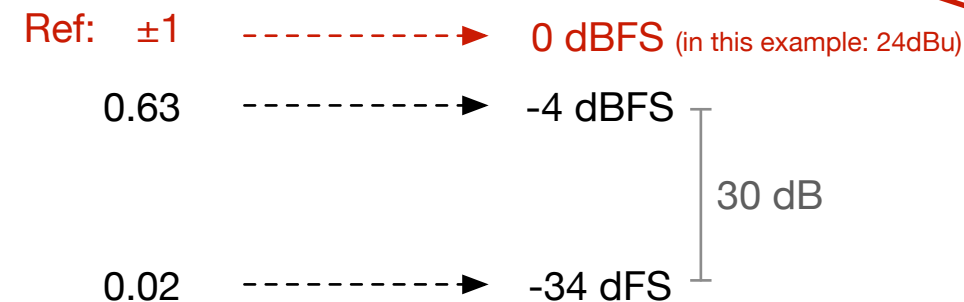
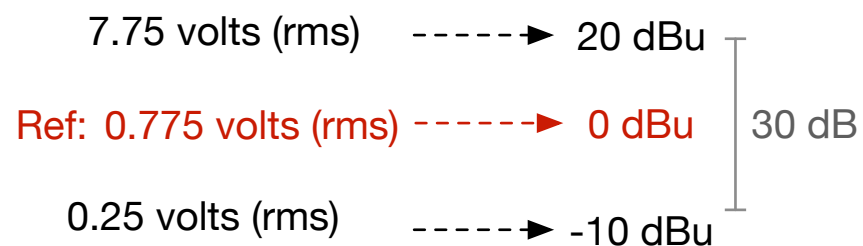
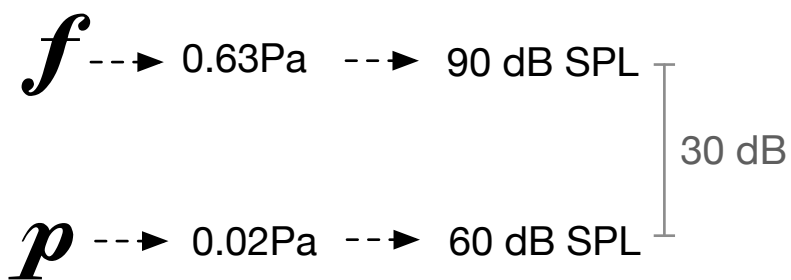
A trumpet player plays music where the loudest and quietest passages reach 0.63Pa and 0.02Pa respectively of air pressure. With a sound pressure meter, these passages read as 90dB and 60 dB,



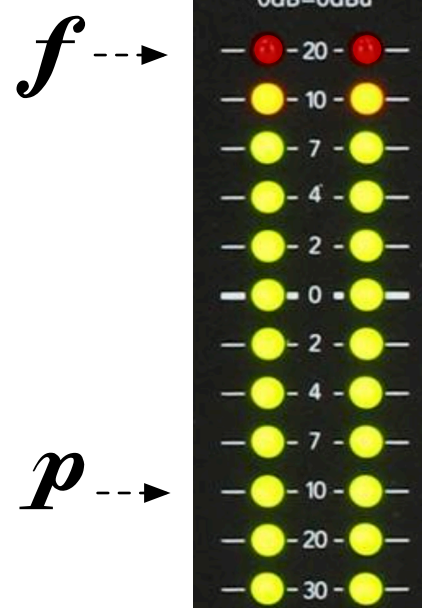
THEN, a Mic converts air pressure variation into an electric signal (i.e., voltage) and gain is added so that the loud part just touches the maximum of an analog mixer's meters. In the example, the mixer is a Mackie VLZ1202 and it's maximum input voltage (i.e. clip point) is 22dBu (which is 2dB above the max value on the meter, see tech below)



THEN, an ADC converts the signal from the mixer to a stream of bits which express amplitude values between +1 and -1. In this example, the ADC (an Antelop ORION) is calibrated to convert a voltage of 24 dBu to the maximum value of 1 (digital clip point).

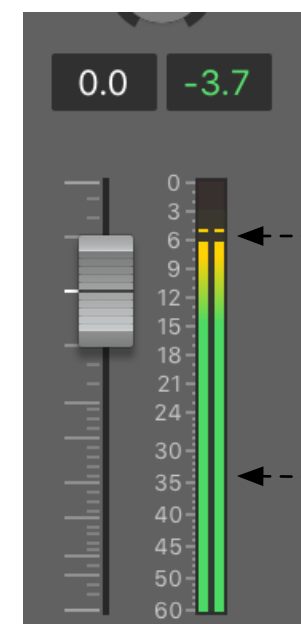


Ref: $\pm 0.00002\text{Pa}$ ---> 0 dB SPL
(Threshold of hearing)



Mackie VLZ1202 - Tech Spec

Maximum Levels	
Mic in:	+22 dBu
Tape in:	+16 dBu
All other inputs:	+22 dBu
Main Mix XLR out:	+28 dBu
All other outputs:	+22 dBu



Antelop ORION - Tech Spec

Analog Inputs
4 x D-SUB 25
(32 channels total).
+24 dBu max, 11.2 kOhms